

REMARKS

Favorable reconsideration of this application, in light of the following discussion, is respectfully requested.

Claims 11-28 are pending.

Please note that U.S. Patent Pub. No. 2004/0152471 to MacDonald et al. was not disclosed on Form PTO-892. Therefore, it is respectfully requested that the Examiner properly cite MacDonald and that the next Office Action (if any) be made non-final in view of the defects.

I. Objection to the Specification

In the Office Action, at page 2, numbered paragraph 2, title was objected to. The title was amended in light of the Examiner's comments, and accordingly, withdrawal of the objection to the specification is respectfully requested.

II. Rejection under 35 U.S.C. § 103

In the Office Action, at page 2, numbered paragraph 2, claims 11-28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over W.O. 98/15149 to Laiho-Steffens in view of U.S. Patent Pub. No. 2004/0152471 to MacDonald et al. This rejection is respectfully traversed because the combination of the teachings of Laiho-Steffens and MacDonald does not suggest:

receiving reports from the subscriber station at a receive station, each report containing information relating to a signal strength at a location of the subscriber station of at least one receive signal received by the subscriber station and sent by a transmitting station;

storing the reports in a memory of a network device of the radio communication system;

receiving a request for position estimation at the radio communication system; and

estimating the position at a position determining unit taking into account at least two reports stored prior to the request for position estimation,

as recited in independent claim 11.

Laiho-Steffens discusses that information received and measured by the mobile station 150 is compared with the field strength information in a field strength matrix 220 and the location of the mobile station 150 is estimated as coordinates of the field strength matrix 220 in relation to a base station 124 of a serving cell 132 and a base station 126 of at least one neighboring cell

130 in such a manner that the information received and measured by the mobile station 150 corresponds to the field strength information in the field strength matrix 220 as accurately as possible.

Thus, Laiho-Steffens discusses that in the location determination process, information from at least two base stations is used, where this information is sent from the mobile station to the network management system. The network management system 100 receives the information and calculates the location of the mobile station 150.

The present invention of claim 11, for example, recites that the reports containing information relating to a signal strength at a location of the subscriber station of at least one receive signal are received from the mobile subscriber station, which has measured the received signal strength, and the radio communication system stores the reports in a memory of a network device (a base station being the network device).

Laiho-Steffens does not discuss or suggest storing the measured information. Additionally, Laiho-Steffens does not discuss or suggest receiving a request for position estimated at a radio communication system. In Laiho-Steffens, the network management system 100 calculates the location of the mobile station 150 after it receives the information transmitted from the mobile station. The network management system 100 does not receive a request for position estimation.

Additionally, as conceded by the Examiner, Laiho-Steffens does not discuss or suggest estimating the position of a subscriber station at a position determining unit taking into account at least two reports stored prior to the request for position estimation. The Examiner indicates that MacDonald makes up for the deficiencies in Laiho-Steffens. The Applicants respectfully disagree.

MacDonald discusses receiving reported signal strengths or other attachment indicator values from a mobile station, and the reported signal strengths are compared with characteristic received signal strength values in a coverage area of a mobile network.

First, neither MacDonald nor Laiho-Steffens alone or in combination suggest storing the measured information – the reports that each contain information relating to a signal strength. Laiho-Steffens only discusses storing the predetermined field strength matrix and MacDonald only discusses storing predetermined received signal strength values. These values are derived from propagation calculation tools or from test drives using measurement vehicles. Measurement values do not correlate with the claimed measurement reports, that include the information relating to a signal strength. As discussed at paragraph 0046 of MacDonald, the

mobile telephone 120 maintains a mobile-assisted hand-off (MAHO) list, which contains the signal strengths of the signals that the mobile telephone 120 is receiving over the control channels of nearby cells. The MAHO list 300 contains an entry for each of the adjacent cells 1-6, with a corresponding signal strength (RSSI) which represents the signal strengths of the control channels broadcast by cells 1-6 as received by mobile telephone 120. Thus, each measurement report contains six measurement values that stem from the received signal strength from the six neighboring cells.

MacDonald does not suggest that the measurement values are reports and MacDonald does not suggest that a position is estimated that takes into account at least two reports, where each report contains information relating to a signal strength at a location of the subscriber station of at least one receive signal received by the subscriber station.

Therefore, as the combination of the teachings of Laiho-Steffens and MacDonald does not suggest “receiving reports from the subscriber station at a receive station, each report containing information relating to a signal strength at a location of the subscriber station of at least one receive signal received by the subscriber station and sent by a transmitting station; storing the reports in a memory of a network device of the radio communication system; receiving a request for position estimation at the radio communication system; and estimating the position at a position determining unit taking into account at least two reports stored prior to the request for position estimation,” as recited in independent claim 11, claim 11 patentably distinguishes over the references relied upon. Accordingly, withdrawal of the § 103(a) rejection is respectfully requested.

Further, the combination of the teachings of Laiho-Steffens and MacDonald does not suggest “a memory for storing the reports, which a receive station has received from a subscriber station, in which the reports in each case contain information relating to a signal strength at a location of the subscriber station of at least one receive signal received by the subscriber station and sent by a transmitting station; a transmitter to transmit, after a request for position estimation has been received at the radio communication system, at least two reports stored prior to receiving the request for position estimation, the reports being transmitted to a position determining unit, in which the position is estimated taking into account the at least two reports; and a controller to control the network device so that at least two reports are stored prior to the request for position estimation,” as recited in independent claim 28. Neither Laiho-Steffens nor MacDonald, alone or in combination, disclose measurement reports being stored or the number of reports that have to be stored prior to the reception of a location request. Neither

Laiho-Steffens nor MacDonald, alone or in combination, disclose a request for a location. Therefore, claim 28 patentably distinguishes over the references relied upon. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

Claims 12-27 depend either directly or indirectly from independent claim 11 and include all the features of claim 11, plus additional features that are not discussed or suggested by the references relied upon.

As to claim 12, Laiho-Steffens discusses at page 9, line 10 that the device 230 has a user interface to a computer, in contrast to the receive station of claim 12 receiving the reports via an air interface.

As to claim 13, both Laiho-Steffens and MacDonald store predetermined field strength values and not measured signal strength values.

As to claim 14, MacDonald discloses that the mobile station sends measurements periodically in paragraph 0112 and not in paragraph 0012. Paragraph 0012 discloses that the RSS values from the mobile station are compared with values that have been stored. The stored data has been derived from computations or measurements (i.e., test drives with radio measurement vehicles).

As to claim 15, MacDonald sends one measurement report with six measured values. MacDonald does not discuss sending a number of reports.

As to claim 16, paragraph 0014 of MacDonald is ambiguous as to the at least two sets of reported signal strengths being compared with predefined values being at least two sets of measurements performed one after the other by one mobile station or being at least two computation processes performed in parallel, thus describing parallel processing capability.

As to claim 17, in paragraph 0091 of MacDonald, MacDonald discloses the usage of the location process for the mobile assisted handover (MAHO). MacDonald does not disclose sending or storing measurement reports.

As to claim 19, in paragraph 0091, MacDonald discloses received power levels but does not disclose the transmitting power of the transmitting base station.

As to claim 20, MacDonald discloses tracking of the mobile station by the network.

As to claim 21, MacDonald does not discuss or suggest storing received measurement reports. MacDonald only discusses storing the calculated location of the mobile station used for tracking the mobile station.

As to claim 22, MacDonald does not discuss storing measurement reports.

As to claim 23, MacDonald does not discuss requesting measurement reports.

As to claim 24, MacDonald discusses comparing measured values, but one measurement report contains six measurement values.

As to claims 26 and 27, in paragraph 0091, MacDonald teaches about received power levels, but does not discuss the transmitting power of the transmitting base station. In lines 2 and 3 of paragraph 0091, the sets of received signal strengths, power levels or communication parameters all refer to being received and measured by the mobile station. Paragraph 0112 discloses tracking the mobile station, but MacDonald does not specifically mention storing location information.

Therefore, claims 12-27 patentably distinguish over the references relied upon for at least the reasons noted above. Accordingly, withdrawal of the § 103(a) rejection is respectfully requested.

Conclusion

In accordance with the foregoing, the specification has been amended. Claims 11-28 are pending and under consideration.

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

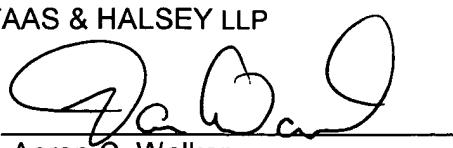
Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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